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ABSTRACT

This paper discusses projected changes in population trends and school enrollments for the United States 1974-1990. The parameters and dynamics of population change are examined, and the population projections of the U.S. Bureau of Census are reviewed in detail. The expected geographic distribution of the projected population is analyzed, and shifts in school enrollments are projected on the basis of expected demographic trends. Finally, the impact of the expected population change on school enrollments is discussed. Numerous data tables and graphs illustrate the discussion. Included in the appendix is a year-by-year projection of total U.S. enrollment for each grade K-12 for the period 1974-1990. In addition, a supplemental section summarizes enrollment-related trends in U.S. education for the period 1950-1970. (JG)

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The Demographic Background

to

Changing Enrollments and School Needs

Russell G. Davis

Gary M. Lewis

February 1976

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1. Introduction

The elementary and secondary schools of the United States have had rapid growth of enrollment in the recent past, and are currently in a period of declining enrollment. The likelihood is that there is growth ahead, but it is the current decline in contrast to the past boom that most influences present plans and policy analysis, for memory of the days of the big battalions is still strong. During the period from 1950 to 1970, elementary school enrollment grew from 22 million to 37 million, while secondary school enrollment more than doubled from 6.5 million to nearly 15 million.[1] With student enrollments in primary and secondary schools growing rapidly, the total number of instructional staff also increased, from 960,000 in 1949-59 to over 2,200,000 in 1969-70; and education programs at post-secondary levels expanded to meet the demand for trained teachers.

New elementary and secondary schools were built to accomodate the larger number of students, and bond issues were passed to expand and improve facilities. Unadjusted total expenditures of all public elementary and secondary schools rose from $6 billion in 1950 to over $40 billion in 1970, while per pupil total expenditures adjusted to 1971-72 purchasing power increased over two-fold.[2] The time was one of growth: growth in school enrollments, growth in teacher and administrative staffs and in programs to train them, increased investment in plant and equipment, and a resulting growth in local expenditures, and in Federal and State funding to education.

Less manifest at the time, the struggle to cope with growth created the expectation that growth would continue to be the problem with which to cope. Administrators and school boards were caught with rising enrollments, facilities that were both crowded and outmoded, and teacher shortages; but with a burgeoning economy, increasing revenues and expandable budgets, the answer was to build and recruit and to stay out in front of growth. The times would

create an expansiveness of mind. This state of mind lasted well beyond the time when the demographic signs indicated that growth was slowing. Demographers who consulted on school projections in the late fifties and early sixties discussed the early indicators that things could be changing, but evidence of the senses to the contrary was too persuasive. Recall the late fifties when the ladies on the buses toted babies, and the parks and sidewalks swarmed with small children. Even for those administrators who credited the less vibrant evidence of demography, there were long-term commitments in capital budgets, tenure commitments made to staff, and board members, with children in school, ready to vote the money. Things boomed along through the sixties. The children were there, and the enrollments were rising, even in K-8, all through the decade.

In 1970 total enrollments in elementary schools began to decline, bringing to an end two decades of educational growth powered mostly by increasing student enrollments. This paper will be concerned with projected changes in enrollments up to 1990. Because changes in population provide the basis for changes in school enrollments, the parameters and dynamics of population change will be discussed. Population projections of the U.S. Bureau of Census will be reviewed; the age, sex and racial structures derived; geographic distribution of the projected population analyzed; and enrollments shifts, resulting from population changes, traced. Finally the likely impact of changing future enrollments on education systems will be assessed. As with the boom that slowed down in an earlier period, but left a lingering mind-set toward growth, it will be interesting to examine whether the reverse of this will happen in future years. With decline in enrollments, and slowed expansion in plant, equipment, staff and expenditures likely to last for several years ahead, will a new time of upturn and growth appear, only to run against an expectation that the pattern of decline will continue? This view may be powerfully reinforced by slower growth in the

economy and a population in which the median age is increasing.

There is growth ahead, not as spectacular as the big, old days, and not the same in texture in any case, but enough to merit foresight and planning. The ordering of this paper will be first a preview of future growth, a more detailed analysis of the future population and enrollment situation, and from this a trace to the consequences for schools and educational programs.

A. Before the Preview of the Future, A Review of the Past

Before pre-viewing the future it may be useful to review, in the form of a Supplement, trends from the recent past. For this purpose Supplement I is offered, and may be found at the end of the paper.

2. Future Populations and Enrollments in Preview

Demographic analysis can provide credible estimates of school enrollments up to 1990, and a preview of these numbers appears in Table 1. This rough sketch of the future provides useful perspectives for planning and policy, but more features of the population and enrollment structure are necessary, and this profile must be derived from analysis of the dynamics of population change over the intervening years. This analysis will provide a reasoned basis for the changes previewed in Table 1 and it will also provide richer details on the age, sex, ethnic and geographic structure of populations and enrollments. From that platform something can be said of the kind, as well as the number, of people the schools must serve.

The response that schools make in future years will be influenced centrally by the numbers and kinds of people that education must serve. Given present

Table 1: Projected Enrollments[1] in Grades K-12 in the United States for Selected Years, 1974-1990.

Grade	Enrollment in Year (in thousands)			
	1974	1980	1985	1990
K	2672	2431	2950	3172
1	3527	3179	3783	4200
2	3540	3194	3579	4095
3	3691	3416	3462	4074
4	3793	3546	3250	3902
5	4036	3611	3226	3879
6	4045	3485	3124	3677
7	4092	3447	3181	3519
8	4108	3487	3330	3353
Total, K-8	33,504[a]	29,796	29,885	33,871
9	4034	3552	3480	3191
10	3964	3657	3409	3050
11	3653	3501	3083	2765
12	3669	3619	3108	2870
Total, 9-12	15,320[a]	14,329	13,080	11,876

[1] Estimated on the basis of Series II projections of the U.S. Bureau of the Census and age-grade ratios from the U.S. Census of 1970. Series II is one of three Bureau of Census population projection series, and is considered to be the most reasonable choice at this time.

[a] In the fall, 1974 there were an estimated 34.4 million enrollees in K-8 and 15.6 million in grades 9-12. See National Center for Education Statistics, Digest of Educational Statistics, (Washington, D.C.: U.S. Government Printing Office, 1975), table 1.

Sources: U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 601, "Projections of the Population of the United States, 1975 to 2050," (Washington D.C.: U.S. Government Printing Office, 1975); and U.S. Bureau of the Census, Census of Population: 1970, Subject Reports, Final Report PC(2)-5A,"School Enrollment," (Washington, D.C.: U.S. Government Printing Office, 1973), p. 119.

attendence policies and assuming no profound changes[a] in the graded structure of the system, future enrollment in grades K-8 will be largely determined by the population in the 5-13 year old age group. By 1977 the first age cohort of children who will make up the age-group 5-13 and the enrollments in K-8 for the year 1990 will be moving toward entry age and promotion through the grades.

The notion of mind-set toward growth or decrement has been mentioned. Table 1, at first glance, pretty much supports this view of decline in grades K-8 in the years ahead to 1990. There is a marked enrollment decline projected from 1974 to 1980, and an insignificant increase between 1980 and 1985. By 1990 enrollments in grades K-8 are projected to be only slightly higher than in the base year, 1974. A closer look at single year enrollment projections provided in Appendix A indicates that kindergarten enrollments begin to edge up in 1980 and increase steadily over the remaining years of the forecast period to 1990. The increase will begin in first grade in 1981, and move up in subsequent years through all eight grades.

If the population forecasts are reasonable, school administrators will have to plan the provision of staff and facilities for slight increases of kindergarten enrollment beginning as early as 1980. Increases in enrollments will appear in the first grade in the following year and in the higher grades in the succeeding years. Increased enrollments in the early grades will begin and run for some years in the midst of a general decline in K-8 enrollments, and school administrators will have to communicate this contrastive dynamic to school boards in order to insure adequate provision of resources. State and Federal officials could assist by providing the information and interpretation of this change to local officials.

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a) Measures such as the repeal of compulsory attendence would clearly affect future enrollments, but lie outside the domain of the projections included in this paper.

Population projections indicate that growth in enrollments will occur, but to assess the adequacy of the basic projections will require analysis of the dynamics of population growth. The three components of the dynamic are fertility which affects births and hence new entrants a fixed number of years ahead, mortality which affects deaths, and migration which has a small and regular effect at the national level, but may have large effects on school enrollments at the local level.

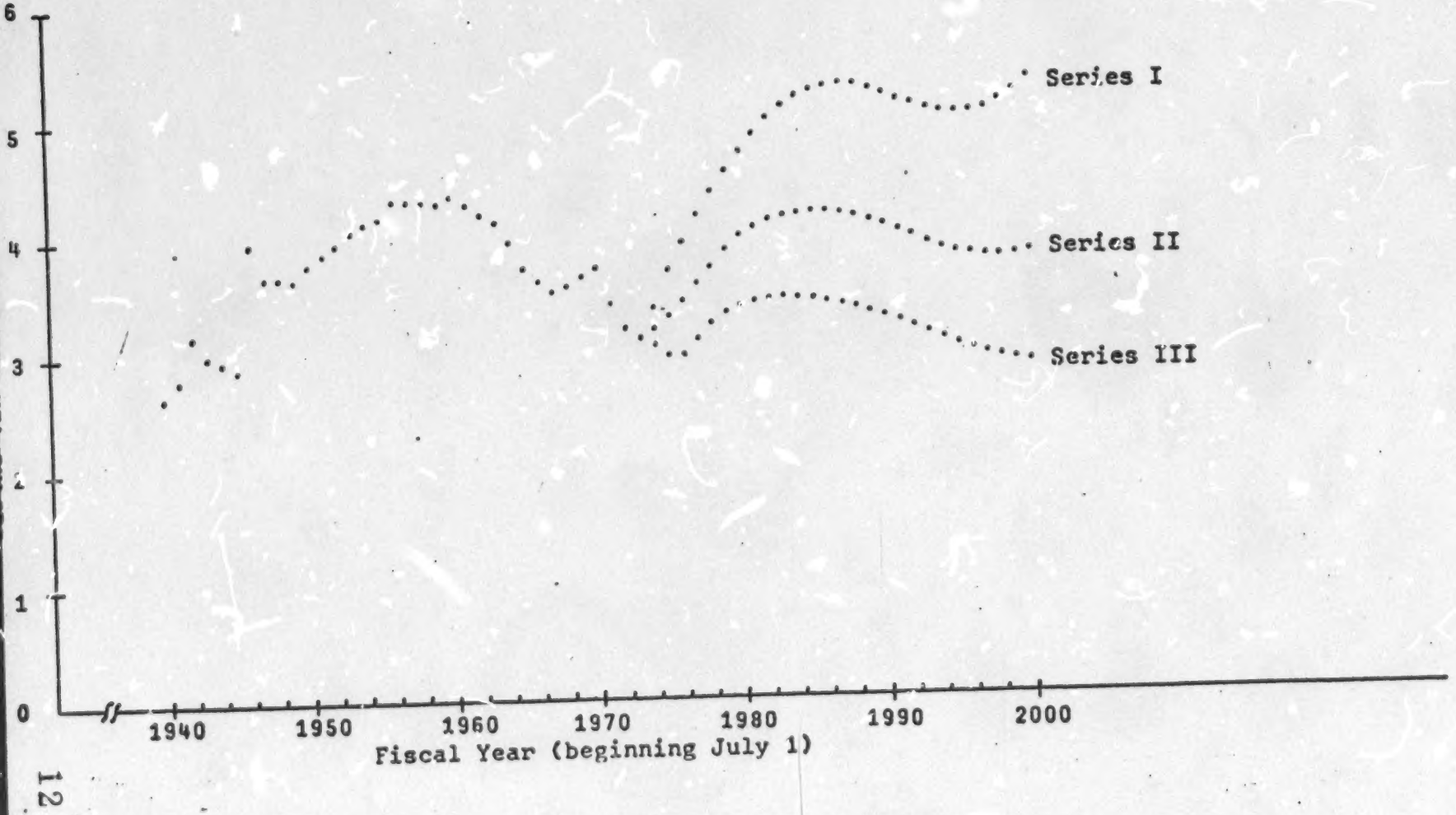
3. Population Dynamics: The Basis of Changing Enrollments

A. Births: Past and Projected

Changes in national enrollments in elementary and secondary schools, previewed in Table 1, relate directly to changes in the school-age population of the United States, which in turn is largely the result of changes in the annual number of births. A birth cohort will enter kindergarten at approximately age 5. Figure 1 indicates the magnitude of past births as well as the number of births projected in the three series of U.S. Bureau of the Census population projections.[3] The essential differences among the three population projections result from different assumptions of fertility rates. Series II represents a future in which the two-child family is the norm. Series I represents a tendency toward larger than a two-child family and Series III represents an increased tendency toward the one-child family. Series II is the projection the Bureau of the Census calls the one "appearing at this time to be a reasonable choice."[4]

Births in the United States generally rose between 1940 and 1960, and this rise, called the "baby boom," brought rapid increase in elementary and secondary enrollments during the 1950's and 1960's. Since 1960 annual births have been

Figure 1: Total Births in the United States, 1940 to 1973, and Projected from 1974 to 2003.



Sources: U.S. Bureau of the Census. Current Population Reports, Series P-25, No. 601, Tables 1 and 2.

falling, with only an occasional slight upswing, and the declining birth trend has caused declining enrollments, first in elementary schools and later at the secondary level.

While school systems in the United States are currently in the midst of declining elementary enrollments, Bureau of the Census population projections indicate that this will end and be replaced by increasing births and enrollments. The decline in annual births is projected to end in the mid-1970's and births are again expected to rise. There are some indications that the upswing in births has already started, but an upward trend is by no means established. Provisional figures from the National Center for Health Statistics show that 3,187,000 children were born from July 1, 1974 to June 30, 1975.[5] This is up from the recent low point established in fiscal year 1973 of 3,112,000 births. Figure 1 shows that there have been upswings of this magnitude, or greater, in the 1968-70 period during the general decline from the high point in 1960. Demographers also have some evidence from specific areas or sub-groups of the population to support the view that births are rising, and that this is a trend and not a mere fluctuation. In California live births increased from 297,800 in 1973 to approximately 311,600 in 1974, and the significance of this as a reflection of changes in fertility has been analyzed by Sklar and Berkov and will be examined later.[6]

In summary, alternative projections of population are largely determined by the magnitude and timing of births, as shown in Figure 1, and births are determined by fertility rates, and these parameters are influenced by economic and social conditions in the United States.

B. Fertility Rates and Birth Expectations

In projecting any population change, the components of change are births, deaths, and migration, but births remain the single most important component to

be estimated. The total number of births in any given year is a resultant of the number of women in childbearing years and the fertility of these women. The total number of women in childbearing ages can be accurately predicted barring any major disruptions in mortality, but estimating fertility rates is considerably more difficult. As fertility is critical to projecting the number of births, it is important to analyze factors contributing to changes in fertility rates and to changes in future trends. Here "fertility rate" refers to general fertility rate, which in the United States is births per thousand women in the child-bearing ages, i.e., 15-44 years.

Fertility rates in the United States have declined steadily since 1957 (see Figure 2). The decline has been attributed to changes in employment, work roles and career aspirations of women, more liberal abortion laws, postponement of marriage, higher rates of divorce, increased use of reliable contraceptives, and concern about the environment, resource limits and overpopulation. The combined effect of these many factors has not been systematically analyzed,[7] and fertility remains a very difficult variable to project into the future.[b)]

Changes in employment of women is clearly related to fertility. Since 1957 when fertility rates in the U.S. began to decline sharply, female participation in the labor force has rapidly increased. In 1960, the female labor force of 23 million women 16 years and older comprised 32.3% of the total U.S. labor force;[8] by 1972, the number of women in the labor force had increased by 10 million and their representation in the labor force had risen to 37.4%. In 1972, 43.3% of all women 16 years and older were in the labor force, a rise of 6.0% in the

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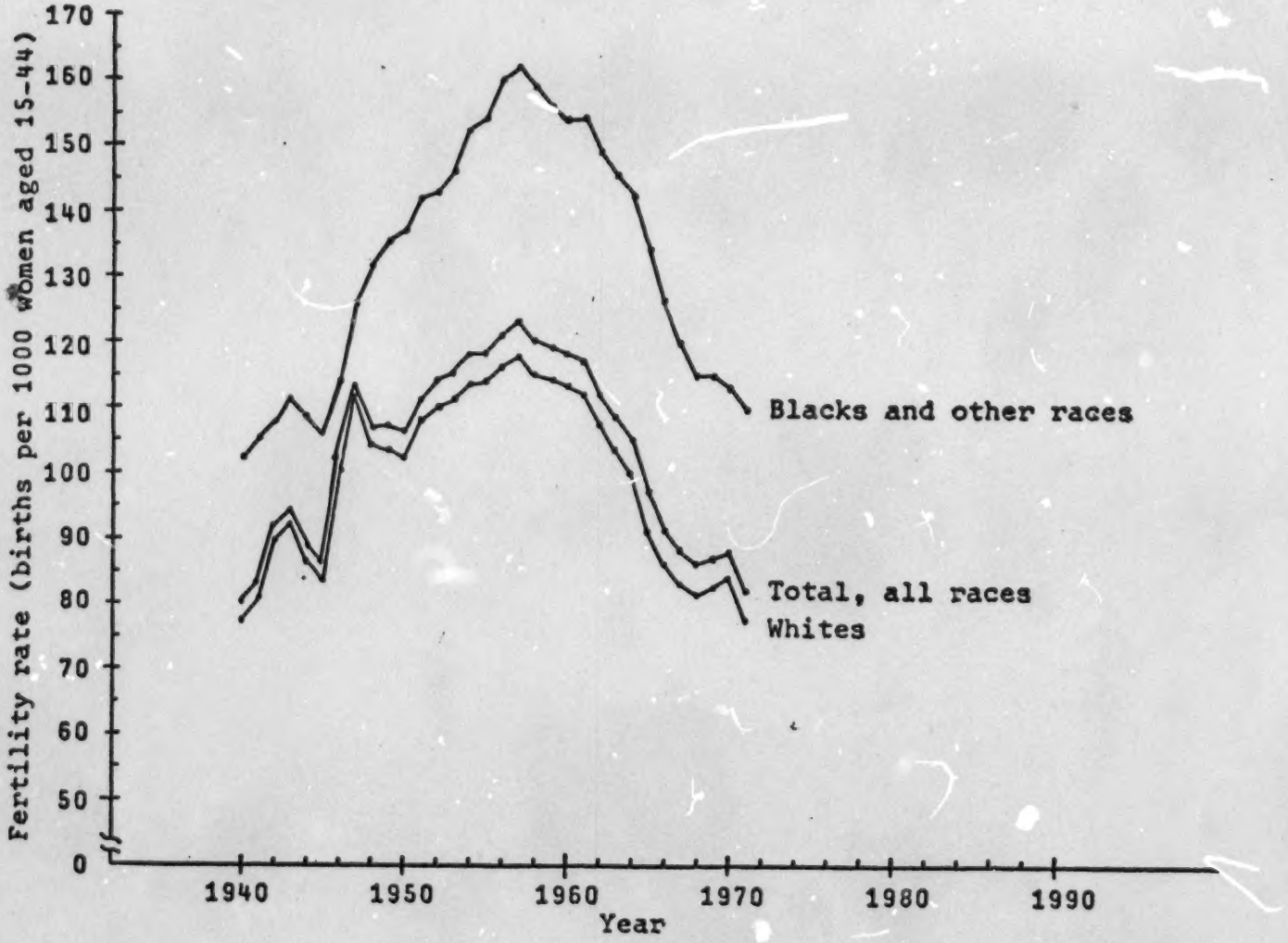
b) Neither the extended increase in fertility prior to 1957 nor the recent lengthy period of decline were anticipated by demographers. See U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 601, "Projections of the Population of the United States, 1975 to 2050," Washington, D.C.: U.S. Government Printing Office, 1975, p. 16.

Figure 2: Fertility Rates in the United States, 1940-1971.



Source: National Center for Health Statistics, Vital Statistics of the United States, 1971. Vol. I -- Natality. Rockville, Md.: 1975.

participation rate from 1960.[9] As women increasingly entered the labor market, fertility rates declined.

Future availability of employment for women, and individual decisions concerning the desirability of entering and remaining in the labor force, will affect fertility rates; and increased availability of jobs would depress fertility in the future. Economic projections do not indicate that the U.S. economy or work force will be growing rapidly in the 1980's.[10] Even before the recent rise in unemployment began in 1974, the Bureau of Labor Statistics (BLS) projected slowing economic growth, starting around 1978 and continuing through the 1980's. The recent decline in births is a major element of judgment influencing the BLS projections of economic growth. With a decreasing rate of growth in the population 16 years and over, the labor force will grow less rapidly and with fewer producers the BLS predicts that in the period 1980-85, real gross national product will grow at a reduced rate, when compared to the period 1968-80. With slower economic growth, BLS forecasts reduced growth in female participation in the labor force. During 1962-70, women made up 60% of the net increase in the labor force, but from 1972 to 1985, women are expected to account for only 46% of the net growth. This will still mean some 42 million women working by 1985 however. This version of the economic future is consistent with fertility rates which will no longer continue to decline rapidly.

The observed trend of fertility decline can also be associated with the postponement of marriage that occurred during the 1960's. In 1960 the percent of single women aged 20 to 24 years was 28.4 but by 1973 the figure had risen to 38.3,[11] indicating that over the decade a substantial number of young women were postponing the age of first marriage. Since most births occur within marriage, the postponement of marriage acts to depress the fertility rate, producing a clear inverse relationship between the age of first marriage and the ultimate level of cohort fertility.

The post-1970 decline in fertility does not seem to be caused by marriage postponement as much as by a decline of fertility within marriage. The U.S. Bureau of the Census remarks that "the decline appears to reflect both a postponement of fertility and a decline in lifetime fertility among women now in the young childbearing years."[12] In 1974 about 56% of the U.S. women 15-19 years old who were ever-married were childless.[13] In 1960 the figure was 44%, indicating that in 1974 couples were waiting longer to have children.

To get at the dynamics of future population change it is necessary to go beyond present and past fertility rates. Stated birth expectations of American women attempt to assess the direction of change in future fertility levels. Since 1967 the U.S. Bureau of the Census has regularly conducted surveys in which future birth expectations of American wives are determined. The evidence from these surveys indicates that younger American wives increasingly favor the two-child family in contrast to the larger family sizes preferable in the past.[14] Table 2 shows that in 1974, 73% of the 18-24 year old wives of all races indicated their total expected lifetime births would be two or less. This contrasts with the earlier figure of 45% in 1967, and complements the reduction in the percent of wives who expected 3 or more children over their lifetime. Similar trends are noticeable for the age group 25-29 years.

The high percentage of black wives 18-24 years old expecting zero or one birth over their lifetime must be understood along with the fact that black women tend to have more unwanted pregnancies than white women.[15] The fertility rate of black women has been higher than that of whites (see Figure 2), and has not been converging rapidly in the most recent past. However birth expectations of young black wives are almost the same as young white women and fertility rates of the two groups can be expected to approach more closely in the future.[16]

Table 2: Total Lifetime Births Expected by Race: For Reporting Wives 18 to 24 Years Old and 25 to 29 Years Old, 1967 and 1974.

Survey date, age, and race	Total lifetime births expected (figures in percent)			
	0 or 1	2	3	4 or more
18 to 24 Years Old				
1974, all races	17.0	55.7	19.4	7.8
White	16.4	57.1	19.1	7.4
Black	25.9	42.0	20.8	11.3
1967, all races	7.4	37.1	29.8	25.7
White	7.0	37.5	29.6	25.9
Black	10.6	33.1	32.0	24.3
25 to 29 Years Old				
1974, all races	14.2	51.7	22.3	11.9
White	14.3	52.7	22.1	10.9
Black	12.8	36.2	24.3	26.7
1967, all races	7.3	29.3	33.5	29.9
White	6.9	30.0	34.3	28.8
Black	11.4	22.1	27.6	39.0

Source: U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 277, "Fertility Expectations of American Women: June 1974" (Washington, D.C.: U.S. Government Printing Office, 1975), Table A.

The survey data on birth expectations suggests that the completed fertility rates of women will be around the replacement level, that is, the levels of births necessary to replace the current population (about 2.1 births per women in childbearing age). Fertility assumptions in recent population and work force projections have been based largely on these survey data and the belief that for births to fall much below the replacement level significant changes in social and economic conditions would have to occur. Both projections of the U.S. Bureau of the Census and Bureau of Labor Statistics assume that the rapid decline in fertility rates will end soon. However the assumed ultimate cohort fertility rate at replacement level (2.1 births per women over her childbearing years) is actually higher than the current total fertility rate. Total fertility in 1973 was about 1.9 births per woman in childbearing ages.[17]

There is some short-term evidence to indicate that rapid decline in fertility rates may be ending. Sklar and Berkov note that the general fertility rate rose by 2.3% in California between 1973 and 1974.[18] This occurred in spite of high rates of legal abortion, a bad economic outlook, and no increase in the marriage rate. Sklar and Berkov also note the high proportion of childless women under 30 who have ever been married (it is about one-third in California) and suggest that if they are to realize their total birth expectations, childbearing cannot be postponed much longer. If large numbers of women who postponed fertility during the 1960's were to suddenly begin to make up for postponed childbearing, the decline in fertility would likely cease. There remains the question of how sound the use of California is, as a precursor of fertility behavior in the nation. Sklar and Berkov suggest that in the period 1965 to 1973 California's experience was indicative of trends in New York, Hawaii, Washington and Oregon. Demographers working with survey data from other

populations are not fully persuaded that as California goes so goes the nation.

Increased future fertility will certainly lead to increased births, but Figure 1 shows that births will rise again in the 1980's even if the low path of Series III is an accurate indicator of the future, and fertility rates continue to fall. An increase in the number of births can occur with a simultaneous decrease in fertility if larger numbers of women have children. Women in the age groups 18-34 accounted for 86% of the total fertility rate in 1973,[19] and the number of women in these prime childbearing ages has increased rapidly since 1960 and will continue to increase until 1985 (see Tables 3 and 4).

C. Assumptions Reviewed

The enrollment forecasts of Table 1 were based on the school age population from the U.S. Census Series II Projections. Series II assumes an ultimate cohort fertility rate of 2.1 births per woman, which appears reasonable on the basis of other indications. This implies that decline in fertility rates is slowing and the two-child family preferred by young wives in estimating the number of their lifetime births will be the norm for the future. Series I and Series III are based on alternative fertility assumptions of ultimate cohort fertility rates of 2.7 and 1.7 respectively. Mortality and migration trends are assumed to be the same in all three series. In the recent past these two components of population change have been more stable than births and will not have the impact on the future size and composition of the population that fertility changes can have. Net migration into the U.S. is assumed to remain at about 400,000 people per year, a figure close to the annual level over the past decade.

Given the assumptions of the Series II forecast, certain structural features of the population could be of direct interest to administrators. These structural features, which appear in Tables 3-5, are discussed in the next section and their

educational consequences traced in the concluding sections.

4. The Structural Features of the Population Forecast to 1990

A. Age and Sex Structure.

Table 3 gives the population of the United States by age groups for selected years, 1950-1974, and the projected population to 1990 using Series II of the U.S. Bureau of the Census projections. This table uses age groupings of particular interest to educators; the 5-13 year old age group represents those children normally attending grades K-8, and the age group 14-17 represents the normal ages for students attending high school. With near automatic promotion, age/grade concordance is high in the U.S.

From 1950 to 1970, the elementary school age population increased by 14.2 million. During the decade of the 1970's this age group of the population is expected to decrease by almost 6.4 million, but to increase during the 1980's by 4.4 million with almost all of the increase coming near the end of that decade. These changes will be followed very closely by changes in enrollments in elementary school. Both in terms of absolute and relative change, however, neither the decrease of the 1970's nor the increase in the 1980's will approach the population increase in the age group 5-13 years that occurred in the 1950's.

Population changes in the age group 14-17 years will be steadily downward until 1990. After an increase of almost 7.5 million during 1950-1970, and continued growth into the 1970's, this age group will decline in size from the mid-1970's until the end of the projection period in 1990. The magnitude of the decline over the period 1974 to 1990 will be approximately 3.9 million.

Other projected changes in population are of interest as well. Table 3 shows that the growth of the college-age population 18-24 occurred most rapidly

Table 3: Population of United States by Age in 1950, 1960, 1970 and 1974 and Projected to 1980,1985, and 1990[1]

Age Group	Population (in thousands)							Net changes (in thousands)						
	1950	1960	1970	1974	1980	1985	1990	1950-60	1960-70	1970-74	1974-80	1980-85	1985-90	1974-90
Total, all ages	152,271	180,671	204,879	211,909	222,769	234,008	245,075	28,400	24,208	7,030	10,860	11,299	11,007	33,166
0-4 years	16,410	20,341	17,156	16,304	17,259	19,785	20,096	3,931	3,185	- 852	955	2,526	311	3,792
5-13 years	22,423	32,965	36,636	34,082	30,246	30,380	34,643	10,542	3,671	- 2,554	- 3,836	134	4,263	561
14-17 years	8,444	11,219	15,910	16,878	15,753	14,388	12,941	2,775	4,691	968	- 1,125	- 1,365	- 1,447	- 3,937
18-24 years	16,075	16,128	24,683	26,908	29,441	27,834	25,162	53	8,555	2,225	2,533	- 1,607	- 2,672	- 1,746
25-34 years	24,036	22,919	25,293	29,770	36,157	39,846	41,062	- 1,117	2,374	4,477	6,387	3,689	1,216	11,292
35-54 years	39,090	44,799	46,452	45,644	48,342	53,710	61,758	5,709	1,653	192	1,698	5,368	8,048	15,114
55 years and over	25,793	32,300	38,749	41,322	45,570	48,124	49,412	6,507	6,449	2,578	4,248	2,554	1,288	8,090

[1] Projected population refers to Series II.

Sources: U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 601, Tables E, 6, and 8.

during the 1960's but is expected to continue until the 1980's when the population in these ages will begin to decline. Another significant change will occur in the age group 25 years and older. It is here that the population is expected to increase steadily and rapidly over the period ahead. The possible effects of this on school services will be examined.

Table 4 indicates that the sex structure of the United States is not expected to change much over the period 1974-1990. Males will still outnumber females in all young age groups, as the trend continues for more males than females to be born. However females will predominate in the older age groups as their survival rates are expected to continue to remain higher than male survival rates. The ratio shifts at a point beyond school age and there is generally no change or structural difference of consequence for enrollment forecasts.

Overall, the most significant structural feature of the future population will be the decline in the relative numbers of youths, and this will be of consequence for schools. In 1974, 16.1% of the total U.S. population were 5-13 years old and another 8.0% were 14-17 years of age (see Table 5). In 1990 however these figures are expected to decline to 14.1% and 5.3%, respectively, as the median age in the U.S. population continues to increase. In terms of absolute numbers the future population will be less child dominated than the population of the present or the recent past. This will be true for all ethnic groups as Table 5 shows.

B. Ethnic Structure

The ethnic structure of the United States population is not expected to change much over the period 1974 to 1990. Minority racial groups currently represent 12.9 percent of the U.S. population. By 1990 this is expected to increase to 14.8% as the somewhat higher fertility rates of blacks and other

Table 4: Estimated and Projected Sex Ratios for the U.S. Population, by Age: 1974 and 1990.[1]

Year	Sex ratio (males per 100 females)							
	Total, all ages	0-4	5-13	14-17	18-24	25-34	35-54	55 and over
1974	95.4	104.4	104.0	103.8	101.4	98.5	94.5	78.5
1990	94.6	105.1	105.0	104.6	101.6	98.6	95.6	75.4

[1] Projected figures refer to Series II.

Source: U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 601, tables G, 6, and 8.

Table 5: Population of the United States by Race and Age in 1960, 1970, and 1974 and Projected to 1980, 1985, and 1990[1].

Age and Racial Group	Population (in thousands)						Percent Distribution					
	1960	1970	1974	1980	1985	1990	1960	1970	1974	1980	1985	1990
All Races												
Total, all races and ages	180,671	204,879	211,909	222,769	234,068	245,075	100.0	100.0	100.0	100.0	100.0	100.0
0-4 years	20,341	17,156	16,304	17,253	19,785	20,096	11.3	8.4	7.7	7.7	8.5	8.2
5-13 years	32,965	36,636	34,082	30,296	30,380	34,643	18.2	17.9	16.1	13.6	13.0	14.1
14-17 years	11,219	15,910	16,878	15,753	14,388	12,941	6.2	7.8	8.0	7.1	6.1	5.3
18-24 years	16,128	24,683	26,908	29,441	27,834	25,162	8.9	12.0	12.7	13.2	11.9	10.3
25-34 years	22,919	25,293	29,770	36,157	39,846	41,062	12.7	12.3	14.0	16.2	17.0	16.8
35-54 years	44,799	46,452	46,644	48,342	53,710	61,758	24.8	22.7	22.0	21.7	22.9	25.2
55 years and over	32,300	38,749	41,322	45,570	48,124	49,412	17.9	18.9	19.5	20.5	20.6	20.2
White												
Total, all ages	160,023	179,491	184,543	192,162	200,548	208,686	100.0	100.0	100.0	100.0	100.0	100.0
0-4 years	17,373	14,456	13,576	14,256	16,526	16,790	10.9	8.1	7.4	7.4	8.2	8.0
5-13 years	28,533	31,122	28,662	24,970	24,804	28,495	17.8	17.3	15.5	13.0	12.4	13.7
14-17 years	9,839	13,628	14,317	13,136	11,843	10,430	6.1	7.6	7.8	6.8	5.9	5.0
18-24 years	14,169	21,507	23,146	24,978	23,296	20,727	8.9	12.0	12.5	13.0	11.6	9.9
25-34 years	20,230	22,167	26,058	31,267	33,989	34,633	12.6	12.3	14.1	16.3	16.9	16.6
35-54 years	40,252	41,353	41,253	42,390	46,859	53,550	25.2	23.0	22.4	22.1	23.4	25.7
55 years and over	29,627	35,268	37,528	41,165	43,231	44,063	18.5	19.6	20.3	21.4	21.6	21.1
Black and Other Races												
Total, all ages	20,648	25,388	27,367	30,606	33,520	36,389	100.0	100.0	100.0	100.0	100.0	100.0
0-4 years	2,969	2,700	2,728	3,003	3,259	3,306	14.4	10.6	10.0	9.8	9.7	9.1
5-13 years	4,432	5,513	5,420	5,276	5,577	6,148	21.5	21.7	19.8	17.2	16.6	16.9
14-17 years	1,380	2,292	2,561	2,617	2,545	2,511	6.7	9.0	9.4	8.6	7.6	6.9
18-24 years	1,959	3,176	3,762	4,463	4,538	4,435	9.5	12.5	13.7	14.6	13.5	12.2
25-34 years	2,688	3,125	3,712	4,890	5,857	6,429	13.0	12.3	13.6	16.0	17.5	17.7
35-54 years	4,547	5,099	5,391	5,953	6,851	8,210	22.0	20.1	19.7	19.5	20.4	22.6
55 years and over	2,673	3,482	3,793	4,405	4,894	5,351	12.9	13.7	13.9	14.4	14.6	14.7

[1] Projected population refers to Series II.

Source: U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 519, Table 1; and Ibid., Series P-25, No. 601, Tables 6 and 8.

races are expected to persist. Table 5 indicates the racial structure of the U.S. population for selected years in the past and projected to 1990. In 1974 approximately 5.4 million of the 34.1 million elementary school age children were blacks or children of other races. In 1990, the number of minority children in this age group is expected to reach 6.1 million out of a total of 34.6 million. Children of minority racial groups represented 15.9% of the 5-13 year old population in 1974 and are expected to increase in relative terms to 17.7% of that age cohort in 1990. A similar relative increase is expected to occur in the 14-17 year old group. In 1974, 15.2% of that age group was comprised of blacks and other races. In 1990 their representation is expected to increase to 19.4%. The location, or geographic distribution of minority racial groups is of more consequence than the change in numbers.

C. Geographic Distribution of Population and Enrollments.

The geographic distribution and mobility of the population are of primary importance in assessing population changes likely to affect local school systems. Though external migration is relatively small and constant in its effect on national population, internal migration does affect local school enrollments, and it is at this level that important allocations decisions must be made. Population changes at the sub-national level are affected by the mobility of the population, and though estimation of internal migration is difficult, there are some recent trends which may be important in estimating changes in mobility, migration, and resultant population and enrollment distribution within the United States.

In an apparent reversal of the migration patterns over the previous 5-year period, the U.S. Bureau of the Census has recently reported that persons moving

from metropolitan areas [c] exceeded those moving to metropolitan areas between 1970 and 1975.[20] Between 1965 and 1970, net migration increased the metropolitan population by 350,000, but from 1970 to 1975 there was a net outflow of 1.6 million. Of the migration stream into central cities, blacks were relatively more numerous than in the stream migrating from central cities, in effect contributing to the continued concentration of blacks within the central city area. In an analysis of recent migration patterns, the Bureau of the Census reports that "a large part of the net movement from metropolitan areas represents continued urban development around the fringes of metropolitan areas."[21] The migration was away from metropolitan areas to adjacent areas, in effect representing increased suburbanization. There is nothing new in this.

However in an analysis of Bureau of the Census mobility data for the period 1970-1973, Calvin Beale has added some interesting detail to the recent changes in migration patterns from metropolitan areas to non-metropolitan areas.[22] Beale shows that increased growth in non-metropolitan areas was by no means limited to growth in areas adjacent to metropolitan areas. During the period 1970-1973 metropolitan population increased by 2.9%, while non-metropolitan population grew 4.2%. When non-metropolitan areas were broken down into those counties adjacent to a metropolitan area and those counties nonadjacent to a metropolitan area, Beale found adjacent counties grew 4.7% during the period and nonadjacent counties grew 3.7%. These figures are a reversal of trends established in the 1960's. Counties which were entirely rural and not adjacent to metropolitan areas and counties having no city with a population over 25,000 both showed positive growth rates during 1970-1973. Even in areas where populations declined because of heavy outmigration during the 1960's, the pattern is changing: counties with 35% or more employed in agriculture decreased by 11.5% from 1960 to 1970 but only by 0.7% during 1970-1973. Similarly the 9.5% decrease during

[c] Metropolitan areas refers to data on Standard Metropolitan Statistical Areas (SMSA's)

the 1960's in areas with 50% or more black population was reduced to a decrease of 0.7% during 1970-1973.

Beale attributes recent changes in population distribution patterns to a number of causes. The growth of rural retirement and recreation areas, the rise of state colleges and universities in rural areas, easy transportation and communication, and modernization of rural life, all enhance the attractiveness of rural areas. Changed preferences of urban dwellers may also account for changes in population movement since 1970. Beale states that this change "reflects to a considerable extent many people implementing a preference for a rural or small town residence over that of a metro city, quite apart from the improved economic conditions of non-metro areas making such moves feasible."[23]

Fuguitt and Zuiches,[24] in a recent nationwide sample survey, found that if people moved to the areas they preferred, population would decrease within cities over 50,000, but increase in rural areas within 30 miles of a city of 50,000. The largest decline would occur in cities over 500,000 and the largest gains would be for rural areas near cities of 50,000 population or more. The relationship between residential preference and actual migration behavior is affected by employment, transportation, educational opportunity and plain inertia. Yet, stated residential preferences and actual net in-migration to non-metropolitan areas during 1970-1975, indicate at least a short-term migration trend. If the trend continues there will be changes in the geographical distribution of populations, and possibly in school enrollments. It is still necessary to relate population shifts to families with school-age children.

Migration of families with school-age children is an important determinant of change in school enrollments within the United States. Table 6 summarizes the migration patterns for children 5-14 years and 15-19 years, using Bureau of the Census data for 1970-1975.[25] Central cities experienced net outmigration in both school age groups (1.8 million in the 5-14 age group and 0.5 million in

Table 6: School-age Migration for United States Cities and Suburbs: 1970-75 (numbers in thousands).

Migration	5-14 years			15-19 years		
	Central Cities	Balance of SMSA's	Outside SMSA's	Central Cities	Balance of SMSA's	Outside SMSA's
Net migration	-1,768	+1,193	+ 575	- 452	+ 306	+ 146
In migration	+1,139	+2,752	+1,560	+ 513	+ 967	+ 577
From central cities	(X)	+2,171	+ 735	(X)	+ 720	+ 245
From balance of SMSA's	+ 734	(X)	+ 825	+ 329	(X)	+ 332
From outside SMSA's	+ 404	+ 581	(X)	+ 184	+ 247	(X)
Out migration	-2,906	-1,559	- 985	- 965	- 661	- 431
To central cities	(X)	- 734	- 404	(X)	- 329	- 184
To balance of SMSA's	-2,171	(X)	- 581	- 720	(X)	- 247
To outside SMSA's	- 735	- 825	(X)	- 245	- 332	(X)

(X) Not applicable.

Source: U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 285, "Mobility of the Population of the United States: March 1970 to March 1975," (Washington, D.C.: U.S. Government Printing Office, 1975), table 1.

the 15-19 age group). Both the suburbs and non-metropolitan areas experienced net immigration over the period 1970-1975. Generally, enrollment shifts followed changes in the population resulting from migration; central city enrollments declined more rapidly than the national average, and suburban and adjacent nonmetropolitan areas had less rapid declines, and in some instances gains. The same broad trends may be expected to hold over the forecast period.

Population also shifted between regions and states during the period 1970-1975; the Northeast and North Central regions had net out-migration and the West and South had a more rapid population growth[26] as a result of net in-migration.[27] With increases in elementary school enrollments projected after 1982, the South and West may have increases above the national average, and the Northeast and North Central States below the average. In central cities enrollments may actually decline, despite patterns of national and regional growth; and the circumstances in any local area may produce consequences that will markedly differ from those to be traced from the general demographic situation projected.

5. Consequences of Population Changes

A. Enrollment Consequences

Table 7 summarizes enrollment changes projected for elementary and secondary school. Based on Series II projections, Table 7 shows that elementary school enrollment will continue to fall until 1982 on a national scale. The decrease in enrollments between 1975 and 1982 will be 3.4 million. This compares with the decline of 2.4 million already experienced between 1970 and 1974.[28] By 1990 an additional 4.4 million children would be enrolled in elementary schools over the expected low point in enrollments projected for 1982. However the total enrollment of 33.8 million would still fall short of the peak elementary school enrollment of 37.1 million established in 1969.

Table 7: Enrollment Trends for Elementary and Secondary Schools in the United States, 1960-1974, and Projected from 1975 to 1990[1].

Enrollment Trend	Educational Level									
	Elementary					Secondary				
	Years	Initial Enrollment[2] (in 1000s)	Final Enrollment[2] (in 1000s)	Absolute Change (in 1000s)	Percent Change	Years	Initial Enrollment[2] (in 1000s)	Final Enrollment[2] (in 1000s)	Absolute Change (in 1000s)	Percent Change
Rising	1960-1969	32,492	36,797	4305	13.2	1960-1975	9,689	15,367	5,679	58.6
	1983-1990	29,521	33,871	4350	14.7					
Falling	1970-1982	36,677	29,475	-7202	-19.6	1976-1990	15,339	11,876	-3,463	-22.6

[1] Projected figures are based on Series II of the U.S. Bureau of the Census.

[2] Historical enrollment data is for total public and non-public regular day schools.

Sources: See Table 1. Also: National Center for Education Statistics, Projections of Educational Statistics to 1983-84, (Washington, D.C.: U.S. Government Printing Office, 1975), Table 3; and National Center for Education Statistics, Projections of Educational Statistics to 1984-85, Table 3.

The children who will enter elementary school in the period from 1975 to 1979 have already been born; therefore, elementary enrollments must fall until 1979. Children entering elementary school after 1979 have not yet been born and the exact magnitude and the duration of the enrollment decline will vary according to assumptions about future fertility. For example with Series I projections (high fertility), the enrollment decline would end in 1980. From 1981 to 1990 there would be a very dramatic increase of elementary school-age children, amounting to 10.8 million. This would bring elementary enrollments to around 41 million, almost 4 million over the peak of historical enrollments in 1969. This does not appear likely. With low future fertility assumptions (Series III), enrollments would continue to decline until 1986. Between 1975 and 1986 there would be a decrease of some 5.5 million young people of elementary school-age. The enrollment increase would not begin until 1987 and total enrollment in 1990 would be approximately 30 million, well below the enrollments of the present. Indications are that this also is not likely.

Beyond 1982 and lasting until the end of the projection period, Series II projections indicate that elementary school enrollments will rise again. The enrollment increase will be a result of the larger number of births projected for the next few years, and this projection is based on relatively low levels of fertility but much larger numbers of women entering the prime childbearing ages. Single year enrollment projections in Appendix A indicate that the rise in enrollment of school-age children will begin as early as 1980 for kindergarten, and go up in the first grade in 1981. Enrollment increases will occur in second grade the following year and this progression will continue through each successive grade to the end of the projection period. If growth happens according to this schedule, observers will not have long to wait, for the rise in births should appear for the year just past, 1975. If it does not happen there is still no way of knowing whether the up-turn is merely delayed for a year or two.

The young people entering secondary school during most of the projection period have already been born, so estimates of this population are much firmer than those for children of elementary school age. Under all three projection series, the population aged 14-17 years is expected to decline steadily until 1990, and from 1976 through 1990 secondary school enrollments will decline. In 1990 there will be approximately 4 million fewer young people in the ages 14-17 than there were in 1975, and secondary enrollments will decline by about 3.5 million over the forecast period.

B. Educational Consequences

Population and enrollment forecasts imply educational consequences, some traceable directly from population changes, and others which must be traced more indirectly through economic and social concomitants.

i) National Demographic Patterns

National demographic trends indicate declining enrollments at secondary level all through the period. Post-secondary enrollments may begin to decline in 1982, and the decline continue through the forecast period. Increased participation rates of those beyond compulsory attendence age could change this. Designing programs to serve the increasing numbers in the 25-34 age group, who are normally in the work force, could also reverse the decline.

In grades K-8 evidence is persuasive that enrollments will begin to rise in the mid-1980's. The evidence is sufficient to modify the mind-set that the trend will be inexorably down. Discussion of the consequences of this mind-set will be saved for later sections.

The projected sex and racial structure of the school age population signal no major changes, with the relative numbers of non-whites increasing slightly but racial composition and geographic distribution taken together do suggest

consequences. All of the discussion in this section has been on a national basis, though schools are effected mainly by local situations, and hence geographic distribution is significant.

ii) Geographic Trends and Local Consequences

If trends in internal migration continue, central sections of metropolitan areas will continue to lose population and enrollment, suburban areas will continue to gain, but non-metropolitan areas near cities of over 50,000 may expect the most rapid in-migration and growth. This could have important consequences. Large urban systems will continue to lose enrollments, and this taken with ethnic composition, suggests that the share of white enrollment will continue to decline in central areas. However, black enrollments will be growing in the early period from fertility differences and not so much from new migration. This will bring a different population of black children for urban administrators to serve; and one might guess that family stability and sophistication will be higher without the effects of mobility and migration on new urban families. This gets far away from demographic analysis, however.

To balance urban schools racially may require balancing within metropolitan areas, by joining the urban areas that are losing enrollments with the suburban areas that are gaining. Again, this is beyond the base for analysis.

The growth in non-metropolitan areas also has some interesting implications. The first is a signal to administrators who run systems in these areas that they may see growth where there was decline. Again the patterns can be very different for any local area, for the population may grow without an influx of school-age children, as older people with college-age children, or no children at all, are attracted to rural areas. Stable incomes will increase, property assessments rise and revenues increase in

rural areas surrounding smaller cities; but resources may not go to public education. The trend toward consolidation of rural districts may slow and even reverse. Within the general growth trend, migration to any given area will be affected by local community policy on growth, land use regulations, job and schooling opportunities, and cultural and recreational attractions. The trends do not suggest that non-metropolitan growth will make racial balancing difficult, even when urban and suburban are joined.

iii) Social and Economic Concomitants to Educational Change

Forecasts of slowing economic growth, which are based through national econometric models on slowed population and work force growth, have other implications - for schools and educators. One certainty is an aging population, and, numerically at least, one that is less youth-centered. Whether fiscal conservatism is an inevitable consequence is unclear, but age-specific self-interest is likely, and aging babies from the boom years will be in their prime years and enfranchized in leaner times. One consequence of slower economic growth is reduced revenues and tighter budgets and a damped orientation toward expansiveness. Inflation will, as it now does, affect rising school costs, and there will be less in goods and services available at higher prices under tighter budgets.

Employment, or the scarcity of it, will powerfully affect public response to school budgets and programs. Attention may well focus on investment to create jobs directly, rather than indirectly through creation of school opportunities. Job creation may not be a successful or easy policy to finance and implement, but its effect may be to reduce attention on schooling as a long-range promise for economic solutions. According to Davis and Lewis,[29] educated unemployment, present and growing, will reinforce the shift of attention from schooling to jobs. There may be less faith in long-run investment in general education, but sporadic unemployment

may provide time for job-related study and training, especially for the large and increasing populations in the 25-34 year ages. Schools and colleges may be supported but for doing different things, on different schedules, for different client groups with different needs. One example is piecewise training over a longer time span for 25-34 year age groups. For these and other age groups, pre-school children and the aging, schools may have to provide greater outreach in services. The need for greater outreach and the clientele are clear, the alternative possibilities for delivery of services are varied.

A mind-set toward enrollment decline, reinforced by data showing declines in the early period and pari pasu with slowing economic growth and diminished revenues for schooling, could have some important consequences for schools and administrators. It may be difficult to marshal resources for changed circumstances when enrollments begin to creep up in early grades. First and most obvious will be the need to find new teachers, or shift existing ones. Recruitment pools may have been affected by earlier reductions in pre-service teacher training activity. The employment outlook suggests no shortage of people with general education credentials looking for teaching jobs, and intensive or in-service programs could supply professional training. Hiring may not be easy for school boards oppressed by shrinking revenues, the view that enrollments can't be going up, and evidence from pupil-teacher ratios which suggests the system is already heavy with teachers. Pupil-teacher-ratios have been going down for some years, the first dramatic move downward at elementary level coming after 1966 when the effects of the Elementary and Secondary Education Act began to appear.[30]

HEW projects a continued decline in pupil teacher ratios through 1983. It may be difficult to persuade school boards to increase staff to serve increasing enrollments in the lower grades. Shifting unionized teachers to the lower grades may also be difficult. Increasing the pupil load of existing

teachers in the lower grades may bring complaints from them as well as parents who do not want to sacrifice on a school input they view as central to educational quality. Changing accepted ratios, sanctified by time, will not be easy. New hiring may be the most difficult of all, and quality education may suffer.

It may be most difficult to adapt older physical facilities to fit changing enrollment patterns, or to respond to new requirements for delivery of services to age-groups traditionally served outside the formal schools. This would suggest that older and less adaptable facilities should be replaced on a regular schedule over the coming years, but this is unlikely to happen when enrollments are declining and revenues are tight. It will be difficult to justify support for long-range capital plans for improvement of facilities. Bond issues have been in difficulty for some years, and the need for new buildings may not get ready acceptance when times are tight, and the length of the increasing trend ahead is not co-terminus with the life of the facility. The buildings may be justified on the basis of serving multiple needs and client groups in the community, but there is no assurance that the school will be the central institution which shapes the design of the facility. Again this will depend on the success of outreach programs from the formal schools, and administrators will have to make their case by program service. The situation is likely to vary by community, by need, and, as always by the strength of those who lead and speak for their institutions.

The requirement for resources to make schooling more relevant to work and employment may also press general education budgets. So may the pressures to serve the big populations beyond traditional school years. The notion of recurrent education and continuing and life-long learning opportunity is already well touted, but the trade-off under constrained

resources between this form of service and more traditional service to the young is not well studied. The schools are likely to be caught between older and younger age-group pressures. Again such possibilities go far beyond what demographic analysis can reveal.

The continuing high participation of women in the work force may have social effects that will affect program organization and pedogogical arrangements in the schools. The direct effect on fertility and population has been discussed. The effect of family size and composition on education is less directly traceable, but important. With large numbers of working wives and the two-child family implied by the Series II projections and fertility assumptions, the increased enrollments late in the period may present many new service tasks to the schools. Children may come to school from smaller, adult-dominated families, with higher verbal skills and greater need for peer socialization. Or the schools may have to reach out earlier and more directly into the homes, to initiate and reinforce socialization that once took place in larger families with mothers at home. The need for changes in curriculum, pedagogy, and the mode and site for delivery of services are tracable from demographic analysis; the form of the educational response is not.

The effects of family composition, sibling role models and effect on school behavior are now being studied. Cicirelli,[31] studying the two child family in the middle income level, notes a difference in school success of the younger child, depending on whether the older one is a girl or a boy. The optimal pattern seems to be an older girl and younger boy, and given that birth sex engineering may not be all that perfect in the period, education may have to train older siblings to perform important roles for the intellectual and social development of younger ones. But if female sex roles for adults change then girls may not be the nuturing and

socializing siblings they were once. This gets far from the demographic analysis with which the exercise began, but the deomgraphic changes, as projected, will create new situations for education, which go far beyond a mere matter of numbers.

I. Enrollment Changes as a Direct Consequence of Demographic Patterns

A. Patterns at the National Level, Based on Series II Projections

a. Elementary School Enrollments, Grades K-8, Age Groups 5-13

1. Enrollments will continue to fall until 1982.

2. Beyond 1982 and lasting until 1990, the end of the projection period, elementary school enrollments will be rising.

i) Though total enrollments in K-8 will not increase until after 1982, Kindergarten enrollments may begin to increase as early as 1980.

ii) First grade enrollments will increase in 1981, and second grade enrollments will increase the following year.

iii) The enrollments will increase at each higher grade in each successive year and reach the 8th grade in 1988.

3. Between the low point in total enrollments, which will be reached in 1982, and the end of the projection period in 1990, there will be an enrollment increase of 4.4 million.

4. The enrollment of 33.9 million in 1990 will still be lower than the peak enrollment of 37.1 million in 1969.

b. Secondary School Enrollments, Grades 9-12, Age Groups 14-17

1. During the entire forecast period, the enrollments will be declining.

2. In 1990 secondary school enrollments will be 3.5 million less than at the beginning of the period in 1975.

3. Most students who will enter secondary schools in 1990 have already been born, and hence secondary school enrollment projections are based on firmer evidence than projections of elementary school enrollments.

c. Post Secondary School Enrollments, Age Groups 18 and Over

1. Because numbers in the age group will be declining, enrollments are likely to decline, beginning in 1982.

2. Since enrollments depend on changing college attendence patterns as well as on numbers in the age-groups, enrollments could be markedly influenced by policies and programs designed to serve older populations in the 25-34 age groups who are normally in the work force.

B. Racial Structure of the School-Age Populations

There is a slight change projected in the racial structure of the population, with non-whites increasing slightly relative to whites. The racial structure will have consequences mainly when considered with changes in geographic distribution.

C. Geographic Structure, Trends and Consequences

a. Urban and Central City Areas

1. Continued loss of population, including school-age, and hence enrollments declining more rapidly and longer than national averages.

2. Increasing concentrations of non-white population and enrollments, but resulting less from in-migration as occurred in the past. Longer term resident families will be less influenced by new migrant problems, and hence will be potentially different clienteles for urban schools.

b. Suburban Areas Surrounding Major Cities

1. Continued increase of population and enrollments relative to

c. Rural Areas Surrounding Small and Mid-Sized Cities

1. Decreased migration from rural regions will slow population loss in these areas.

   i) The trend already shows stabilization, with decreased migration from rural areas, even those predominately populated by farm families and blacks.

2. Increased migration to rural areas surrounding small cities.

   i) Increased attraction to these areas for school, recreation, and retirement.

   ii) Though population may grow, the age groups may be older and school-age populations and enrollments may not increase proportionately.

   iii) Property values and revenues may increase but the central concern of older residents may not be schooling. Investment in recreational facilities and transport may be the central preoccupation of residents of rural areas.

d. Regional and Inter-State Population Shifts

1. Faster increase in population in Western and Southern-tier states, with differences between states within the areas.

2. Slower growth in northern parts of East and Mid-West, with some states showing continued loss of population, including school-age groups.

3. State-Specific Changes:

   i) Rapidly growing states are Florida, Arizona, Nevada, and Alaska.

   ii) States with slow or declining growth are New York, Rhode Island, Pennsylvania, and Illinois

II. Social and Economic Concomitants of Population Growth With Consequences for Educational Change

A. Population, Work-Force and GNP

a. Nationally, a slowing population growth will result in a slower increase of new entrants to the work force. As a result:

1. A slowing of growth in GNP is forecast.

i) This economic forecast is based primarily on the slower growth in the population and work force. Changes in resources, e.g. energy, could change the rate and direction of growth.

2. With a slowing economic growth, revenues will decline and resources available for schooling may be constrained.

i) School budgets may be leaner for current and capital expenditures.

ii) With a less optimistic outlook, capital expenditures for facilities may be particularly affected.

3. Employment may be the central concern, and attention may center on creation of jobs, rather than expansion of general schooling.

i) Investment that once went for schooling may go for job creation.

ii) To attract support, schooling and training may have to be more directly work-based and work-related.

iii) Sporadic unemployment, and diminished job opportunity for persons with high, general education, will increase the demand for job-related training that can be offered piecewise and over a longer time period to larger numbers of workers in the 25-34 year old groups.

b. Continued higher participation of women in the work force may have social effects on program and pedagogy within the schools.

1. Children from smaller families, where both parents work, may have different needs from children in the past who have tended to come from larger families.

i) Education may have to reach out earlier and more directly into the homes.

ii) Children may enter schools with more highly developed verbal skills from adult-dominated families reinforced by home-school programs.

iii) The task for kindergarten and the early grades may require less development of verbal skills and more stress on peer-group socialization.

c. Slower economic growth, reduced revenues, tighter budgets and a mind-set toward continued decline in enrollments may have consequences for the management of schools.

1. It may take several years after enrollments begin to edge up slowly in the early grades, to shift away from decremental planning in the financing of schools.

i) Declining revenues will keep capital and current budgets lean, as noted.

2. It may be difficult to build new facilities in the early period, or to adapt existing excess facilities to serve children entering the lower grades.

3. It may be difficult to expand instructional staff or to move staff to levels where enrollment pressures appear.

i) Teacher training activity has been reduced over the years, teacher forces may have aged without replacement, instructional

staffs may be smaller but pupil/teacher ratios lower, and a surplus of teachers may appear in the upper grades while a shortage of teachers, or overburden, begins in the lower grades.

ii) Transferring teachers to lower grades may be difficult because of organizational rigidities; and involuntary shifts without retraining may diminish quality of service.

iii) One possibility may be in-service training of large numbers of people with high, general education and reduced employment prospects; but new hires will be difficult, given budget limits and outlook.

4. The advantage that planners and administrators will have is that the build-up will come slowly and over time. There will be ample evidence of change beforehand, and there will be several alternatives for adapting to situations before they happen.

APPENDIX A

Table A-1: Projected Enrollments[1] in Grades K-12 in the United States, 1974-1990.

Grade	Enrollment in Year (in thousands)															
	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
K	2672	2727	2729	2541	2406	2374	2431	2516	2622	2735	2846	2950	3032	3086	3127	3155	3172
1	3527	3564	3639	3649	3417	3233	3179	3245	3353	3490	3638	3783	3922	4032	4106	4161	4200
2	3540	3477	3512	3581	3594	3376	3194	3137	3197	3301	3435	3579	3722	3858	3967	4041	4095
3	3691	3579	3515	3544	3614	3626	3416	3233	3171	3227	3330	3462	3607	3751	3889	3999	4079
4	3798	3813	3502	3436	3463	3530	3546	3345	3165	3102	3153	3250	3379	3519	3659	3793	3902
5	4036	3863	3697	3562	3515	3542	3611	3629	3423	3240	3175	3226	3325	3456	3593	3742	3878
6	4045	3968	3815	3636	3525	3458	3485	3550	3366	3307	3189	3124	3173	3269	3397	3537	3677
7	4092	4030	3954	3803	3626	3514	3447	3471	3525	3552	3358	3181	3115	3161	3255	3381	3519
8	4104	4056	3995	3928	3772	3598	3487	3420	3444	3507	3522	3330	3157	3092	3136	3229	3355
Total, K-8	33,804	32,894	32,358	31,691	30,932	30,251	29,756	29,546	29,475	29,521	29,646	29,885	30,432	31,224	32,135	33,038	33,871
9	4084	4057	4005	3944	3870	3723	3552	3442	3378	3402	3466	3480	3299	3117	3084	3039	3081
10	3764	3904	3986	3933	3875	3802	3657	3488	3363	3320	3346	3409	3420	3230	3063	3003	3050
11	3553	3651	3652	3671	3623	3569	3501	3367	3211	3114	3058	3083	3142	3152	2974	2819	2765
12	3669	3695	3695	3646	3716	3672	3619	3552	3420	3267	3167	3108	3228	3183	3192	3023	2870
Total, 9-12	15,320	15,307	15,338	15,244	15,084	14,766	14,329	13,849	13,392	13,103	13,037	13,080	12,979	12,682	12,283	11,944	11,676

[1] Estimated on the basis of U.S. Bureau of Census Series II population projections and age-grade ratios from the U.S. Census of 1970.

Sources: See sources in Table 1.

Supplement I

A Summary of Selected Educational Trends

in the United States, 1950-1970

The following statistics highlight some of the growth trends evident in the U.S. educational system between 1950 and 1970. Data is taken from the National Center for Education Statistics.[32]

I. Enrollments

A. Elementary level. Between 1949-50 and the Fall of 1970, elementary school enrollments rose from 22.2 million to 36.8 million. The peak enrollment in that period occurred in 1969 when 37.1 million children were enrolled in elementary school.

B. Secondary level. Enrollments at the secondary level grew steadily over the period from 1949-50 to the Fall of 1970, increasing from 6.5 million to 14.7 million. This was an increase of over 120% in a 20 year period.

C. Vocational Education. In 1950, enrollments in Federally aided vocational classes were 3.4 million. By 1970 enrollments had more than doubled and totaled 8.8 million.

D. Two-year institutions of higher education. Over the 20 year period from 1950 to 1970, enrollments in 2-year institutions of higher education increased from 217,000 to 1,630,000. It was a period of very rapid growth in these schools.

E. Higher education. Degree-credit enrollments in all institutions of higher education grew from 2.3 million in 1950 to over 7.9 million in 1970. While some of the increase was attributable to increases in the college-age population, participation rates also increased dramatically. In 1950 total college enrollments represented 14.2% of the population 18-24 years of age. By 1970 the figure was 32.1%.

II. Educational Staff.

A. Elementary and Secondary Teachers. The number of teachers in public and non-public elementary schools increased from 666,000 in 1949-50 to 1.3 million in 1969-70, an increase of over 90%. The number of secondary school teachers showed a similar increase, going from 366,000 to 971,000 over the same 20 year period. Total public elementary and secondary instructional staff, including supervisors, principals, and teachers, increased from 962,000 in 1949-50 to 2.3 million in 1969-70.

B. Higher education. Faculty in institutions of higher education more than tripled from 1950 to 1970. Over this period, the number of faculty members grew from 247,000 to 825,000.

III. Expenditures.

A. Elementary and secondary level. Total expenditures for public elementary and secondary schools was $5.8 billion in 1949-50. In 1969-70 the figure was $40.7 billion. Over the same period of time, current expenditures increased from $4.7 billion to $34.2 billion. Capital outlay grew in a similar fashion, increasing from $1.0 billion to $4.7 billion. The figures all refer to unadjusted dollar amounts, but similar growth is evident when expenditures are adjusted to the purchasing power in a given year. Per pupil total expenditures (adjusted to 1971-72 purchasing power) for elementary and secondary day schools grew from $450 to $1041 between 1950 and 1970. This reflects not only increased expenditures, but an increased emphasis being placed on education over this time period. In 1949-50, expenditures of public and non-public schools of all levels (including higher education) accounted for 3.4% of GNP. By 1969-70 the figure was 7.5% of GNP.

B. Higher education. Indicative of the general increase in expenditures for institutions of higher education during 1950-1970 is the more than eight-fold increase in current expenditures. In 1949-50 total current expenditures in institutions of higher education were $2.2 billion. In 1969-70 these expenditures had risen to $21.0 billion.

IV. Schools

A. Elementary level. The number of elementary schools declined sharply between 1950 and 1970. This is one of the few instances where decline occurred in the education system over this time period. In 1949-50 there were 128,225 public elementary schools in the country. In 1970-71 there were only 65,800. This decline resulted from the rapid elimination of one-teacher schools. In 1949-50 there were 59,652 one-teacher schools but in 1970-71 the figure had dropped to 1,815.

B. Secondary level. Between 1951-52 and 1967-68, the number of public secondary schools increased by almost 2,800 from 23,746 to 26,531.

C. Two-year institutions of higher education. Accompanying rapid enrollment growth in 2-year institutions of higher education was the rapid expansion in the number of 2-year schools. In 1950 there were 528 such institutions in the country. In 1970, the figure was 827, representing a growth of approximately 57%.

V. Funding

A. Elementary and Secondary level. Federal and State funding of elementary and secondary education rapidly increased between 1950 and 1970. In 1949-50, Federal funding for public elementary and secondary schools was $156 million. In 1969-70 funding had grown to $3.2 billion. State funding also increased, from $2.2 billion to $16.1 billion over the same time period.

B. Vocational education. Federal and State funding for vocational education also increased dramatically. Federal funding went from $26.6 million to over $262 million between 1950 and 1968. State funding for vocational education increased by a factor of almost ten over the same time, going from $40.5 million to $400 million.

C. Public school bond elections. Toward the end of the period of enrollment expansion, bond issue elections started to meet with increasing failure. In 1964-65, 74.7% of all bond issues were approved. This was the peak year in the 1960's. By 1970-71, only 46.7% of the bond issues were passed.

Endnotes

1. National Center for Education Statistics, Digest of Educational Statistics, (Washington, D.C.: U.S. Government Printing Office, 1975), table 3.

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3. U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 601, "Projections of the Population of the United States, 1975 to 2050," (Washington, D.C.: U.S. Government Printing Office, 1975), tables 1, 2.

4. U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 601, p. 21.

5. As reported in U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 601, table C.

6. June Sklar and Beth Berkov, "The American Birth Rate: Evidences of a Coming Rise," Science, (29 August 1975), p. 695.

7. U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 601, p. 5.

8. Denis F. Johnston, "The United States Economy in 1985: Population and Labor Force Projections," Monthly Labor Review (December 1973), table 2.

9. Ibid., table 3.

10. See Monthly Labor Review (December 1973), pp. 3-42.

11. Sklar and Berkov, "American Birth Rate," p. 693.

12. U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 601, p. 5.

13. U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 277, "Fertility Expectations of American Women: June 1974," (Washington, D.C.: U.S. Government Printing Office, 1975), p. 4.

14. Ibid., p. 1.

15. U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 601, p. 22.

16. U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 277, table 1.

17. U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 521, "Estimates of the Population of the United States and Components of Change: 1973," (Washington, D.C.: U.S. Government Printing Office, 1974), table B.

18. Sklar and Berkov, "American Birth Rates," p. 695.

19. U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 601, p. 5, footnote 10.

20. U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 285, "Mobility of the Population of the United States: March 1970 to March 1975," (Washington, D.C.: U.S. Government Printing Office, 1975), p. 1.

21. Ibid.

22. Calvin L. Beale, "Where are all the People Going -- Demographic Trends," (Washington, D.C.: Rural Housing Alliance and Rural America, Inc.), 1975.

23. Ibid., p. 17.

24. Glenn V. Fuguitt and James L. Zuiches, "Residential Preferences and Population Distribution, Demography (August 1975), pp. 491-504.

25. U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 285, table 1.

26. As reported by William Delaney, "Most of Nation's Growth in 1970's Centered in South and West," The Washington Star (December 12, 1975), p. 1.

27. U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 285, p. 2.

28. National Center for Education Statistics, Digest of Educational Statistics, tables 1 and 2.

29. Russell G. Davis and Gary M. Lewis, Education and Employment: A Future Perspective of Needs, Policies and Programs, (Lexington, Mass: Lexington Books, 1975).

30. U.S. Office of Education, Projections of Educational Statistics to 1982-83, (Washington, D.C.: U.S. Government Printing Office, 1974),p. 64.

31. See Richard Flaste, "Expert claims people who look at child-rearing are often 'wearing blinkers'" Boston Herald-American, December, 1975.

32. National Center for Education Statistics, Digest of Educational Statistics, tables 3, 10, 27, 34, 48, 63, 64, 71, 72, 79, 86, 98, and 99.